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(54) NEGATIVE ELECTRODE FOR NONAQUEOUS ELECTROLYTIC SECONDARY
BATTERY, ITS MANUFACTURE, AND NONAQUEOUS ELECTROLYTIC
SECONDARY BATTERY

(57)Abstract:

PURPOSE: To provide a nonaqueous electrolytic secondary battery in which interface resistance between a negative electrode and a polymer electrolyte is not increased even if charge/discharge cycles are repeated, the generation of dendrites on the negative electrode is suppressed, and reliability is enhanced

CONSTITUTION: A negative electrode with a surface area of 10000cm²/g is used in order to obtain a strong united body of a polymer electrolyte and the negative electrode. In order to obtain the negative electrode with such surface area, an alkali metal is electrochemically dissolved from the negative electrode using an alkali metal such as lithium as an active material to form roughness on the surface of the negative electrode. Then an alkali-ion conductive polymer electrolyte material is cured on the surface of the negative electrode to form the strong united body of the polymer electrolyte and the negative electrode.

[Comparative example 2]

The surface of lithium negative electrode was pressed with 60-mesh net made of stainless steel and became uneven one with 18000 cm²/g of surface area. Material for polymer electrolyte was hardened without carrying charge and discharge cycle of the battery. The polymer electrolyte and the negative electrode were united.